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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/544,479	04/07/2000	Seishi Hanaoka	501.38452X00	9481

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EXAMINER

VOLPER, THOMAS E

ART UNIT	PAPER NUMBER
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2665

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DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/544,479

**Applicant(s)**

HANAOKA ET AL.

**Examiner**

Thomas Volper

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 2-9 and 11 and 13 have been considered but are moot in view of the new ground(s) of rejection.
2. Applicant's arguments filed 17 March 2004 regarding claims 10 and 12 have been fully considered but they are not persuasive. As cited in the previous Office action, Yafuso discloses that a modem chip may process a call simultaneously in plural sectors. It is obvious to use this feature to provide a soft handoff between sectors, as a soft handoff would prevent a call interruption.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avidor (US 6,108,536) in view of Locklear, Jr. et al. (US 6,483,870).

Regarding claims 2-4, Avidor discloses converting a plurality of carrier frequency band signals by a plurality of antennas provided in an RF base station to a plurality of base band received signals in an RF unit (see Figure 17; col. 24, lines 18-41). It is inherent that the receiving system contains some sort of buffer memory to contain received signals as the receive

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modem components are operating to demodulate the received signals. Avidor fails to expressly disclose assigning a channel to a modem processing unit that includes the steps of enabling a controller to check the load of a modem processing unit and assigning a channel to the modem processing unit if the modem processing unit has a minimal level of load margin. Locklear discloses a modem pool system wherein a controller maintains loading information and threshold information in a database and compares the loading information to threshold information to determine which modems to activate or inactivate (col. 7, lines 12-15). A server responds to a request for service from a terminal by selecting an available modem in its modem pool (col. 5, lines 25-29). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the loading and threshold information of Locklear to select a modem with minimal loading, i.e. below the threshold level, for channel assignment in the invention of Avidor. One of ordinary skill in the art would have been motivated to do this in order to prevent one particular modem from becoming overloaded.

Regarding claims 5 and 6, Locklear discloses loading a modem up to its threshold level, 80% for example (col. 2, lines 29-35). Thus, a new modem (0% loading) will not be activated unless that threshold has been reached at the already active modem. This meets the limitation of assigning a new channel to a modem with a higher load margin up until the threshold is reached, and also meets the limitation of assigning a new channel to a modem with a lower load margin after the threshold has been reached.

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5. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avidor (US 6,108,536) in view of Locklear, Jr. et al. (US 6,483,870) as applied to claims 2-6 above, and further in view of Yafuso et al. (US 6,108,536).

Regarding claims 7-9, Avidor in view of Locklear fails to disclose a hand-over processing of a mobile station moving from a first sector to a second sector wherein the same modem processing means handles communication with the mobile station in two different sectors. Yafuso discloses plural antennas associated with plural sectors and that one CSM chip may be processing a call through plural sectors (col. 4, lines 27-29). It is well known in the art that in such beamforming systems, each sector uses a different frequency range to transmit and receive than any neighboring sector. This is to prevent interference between sectors. Thus, if a CSM chip is processing a call through plural sectors, the CSM chip, which represents a modem processing means, is processing channels at two different frequencies. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide this capability in the modems in the invention of Avidor. It also would have been obvious to a person of ordinary skill in the art to once again check the loading of the modem as in the system provided by Avidor in view of Locklear before establishing communication in the second sector. One of ordinary skill in the art would have been motivated to do this to provide a soft handover of a mobile terminal from one sector to another. One would have checked the loading again to be sure that the modem would not become overloaded by the soft handoff procedure.

6. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yafuso et al. (US 6,108,536).

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Regarding claims 10 and 12, Yafuso discloses plural antennas associated with plural sectors and that one CSM chip may be processing a call through plural sectors (col. 4, lines 27-29). It is well known in the art that in such beamforming systems, each sector uses a different frequency range to transmit and receive than any neighboring sector. This is to prevent interference between sectors. Thus, if a CSM chip is processing a call through plural sectors, the CSM chip, which represents a modem processing means, is processing channels at two different frequencies. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to process channels of two different frequencies using the same modem processing device, or CSM chip, in the invention of Yafuso. One of ordinary skill in the art would have been motivated to do this in order to provide a soft handover of a mobile terminal from one sector to another.

7. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yafuso et al. (US 6,108,536) as applied to claims 10 and 12 above, and further in view of Locklear, Jr. et al. (US 6,483,870).

Regarding claims 11 and 13, Yafuso fails to expressly disclose assigning the first and second communication channels to another modem processing means when the original modem processing means could not accommodate the channels. Locklear discloses checking the loading of a modem in order to determine whether to use another modem (col. 7, lines 12-15). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use another modem if the original modem would become loaded beyond its threshold. One of

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ordinary skill in the art would have been motivated to do this in order to prevent the overloading of the original modem.

### *Conclusion*

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating

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to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Thomas E. Volper

*TEV*

May 26, 2004

  
HUY D. VU  
SUPERVISORY PATENT EXAMINER  
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